UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/675,700	09/29/2000	Daryl D. Starr	ALA-010B	9585

24501   7590   09/20/2007
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ART UNIT	PAPER NUMBER
2157	

MAIL DATE	DELIVERY MODE
09/20/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

		Application No.	Applicant(s)
Office Action Summary		09/675,700	STARR ET AL.
		Examiner	·Art Unit	
		Barbara N. Burgess	2157	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _21 June 2007_.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-7 and 21-33_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-7, 21-33_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _6-18-07, 8-7-07_.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____ .

DETAILED ACTION

This Office Action is in response to amendment filed June 21, 2007. Claims 1-7, 21-33

are presented for further examination.

Claim Rejections - 35 USC § 103

1.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed
> or described as set forth in section 102 of this title, if the differences between the
> subject matter sought to be patented and the prior art are such that the subject
> matter as a whole would have been obvious at the time the invention was made
> to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was
> made.

2.   Claims 1, 3-4, 6-7, 21, 23-24, 26-33 are rejected under 35 U.S.C. 103(a) as

being unpatentable over Muller et al. (hereinafter "Muller", 6,650,640 B1) in view of Bilic

et al. (hereinafter "Bilic", US Patent Publication 20010048681 A1).

As per claim 1, Muller discloses an interface device for a computer, the interface

device connectable to a network and storage unit, the storage unit including a disk

drive, the interface device comprising:

• A sequencer including a hardware logic circuit configured to process a transport

layer header of a network packet (column 4, lines 48-50, column 7, lines 20-25, 31-

35, 64-67, column 8, lines 1-5, 17-20, 50-60, column 9, lines 1-5, column 15, lines

35-38, column 35, lines 53-67, column 36, lines 11-30);

- A memory adapted to store control information regarding a network connection

   being handled by said device (column 4, lines 20-25, column 9, lines 14-16, 20-25,

   56-58, column 10, lines 1-7, column 11, lines 46-59, column 12, lines 11-15, column

   52, lines 64-67, column 53, lines 1-7);

- A mechanism for associating said packet with said control information (column 4,

   lines 45-50, 58-67, column 8, lines 50-60, 66-67, column 9, lines 13-17, 22-35, 66-

   67, column 10, lines 2-7, column 11, lines 46-59, column 12, lines 11-15, column 16,

   lines 59-67).

Muller does not explicitly disclose:

- selecting whether to process said packet by said computer or to send data from said

   packet to the storage unit, thereby avoiding the computer.

However, in an analogous art, Bilic discloses a protocol processor arranged to select

the group of packets for reassembly depending on which of the communication

protocols was used in transmitting the packets. It controls the host interface logic so to

write the data packets that do not belong to the identified group to the host memory

without reassembly processing by the network interface device (paragraphs [0013,

0023, 0026, 0043, 0046]).

Therefore, one of ordinary skill in the art at the time the invention was made would

have found it obvious to implement or incorporate Bilic's selecting whether to process

packet or send to storage, thereby avoiding the computer in Muller's system to reduce

the burden of frame reassembly imposed on the host processor.

As per claim 3, Muller discloses the interface device of claim 1, further comprising a plurality of network ports, wherein one of the said network ports is connectable to the storage unit (column 4, lines 40-43, column 6, lines 37-40, column 7, lines 15-19, column 8, lines 40-43, column 9, lines 1-5, column 10, lines 65-67).

As per claim 4, Muller discloses the interface device of claim 1, further comprising a Fibre Channel controller connectable to the storage unit (column 61, lines 55-60).

As per claim 6, Muller discloses the network interface device of claim 1, further comprising a file cache adapted to store said data (column 56, lines 20-30, column 58, lines 26-30, column 61, lines 34-35, column 62, lines 47-52).

As per claim 7, Muller further discloses the network interface device of claim 1, further comprising a file cache adapted to store said data under control of a file system in the host (column 56, lines 20-30, column 58, lines 26-30, column 61, lines 34-35, column 62, lines 47-52).

As per claim 21, Muller discloses an interface device for a computer, the interface device connectable to a network and a storage unit, the storage unit including a disk drive, the interface device comprising:

- A receive mechanism that processes a Transmission Control Protocol (TCP) header of a network packet (column 4, lines 48-50, column 7, lines 20-25, 31-35, 64-67,

column 8, lines 1-5, 17-20, 50-60, column 9, lines 1-5, column 15, lines 35-38,

column 35, lines 53-67, column 36, lines 11-30);

- A memory storing a combination of information describing an established TCP

  connection (column 4, lines 20-25, column 9, lines 14-16, 20-25, 56-58, column 10,

  lines 1-7, column 11, lines 46-59, column 12, lines 11-15, column 52, lines 64-67,

  column 53, lines 1-7);

- A processing mechanism that associates said packet with said information (column

  4, lines 45-50, 58-67, column 8, lines 50-60, 66-67, column 9, lines 13-17, 22-35, 66-

  67, column 10, lines 2-7, column 11, lines 46-59, column 12, lines 11-15, column 16,

  lines 59-67).

Muller does not explicitly disclose:

- selecting whether to process said packet by said computer or to send data from said

  packet to the storage unit, thereby avoiding the computer.

However, in an analogous art, Bilic discloses a protocol processor arranged to select

the group of packets for reassembly depending on which of the communication

protocols was used in transmitting the packets. It controls the host interface logic so to

write the data packets that do not belong to the identified group to the host memory

without reassembly processing by the network interface device (paragraphs [0013,

0023, 0026, 0043, 0046]).

Therefore, one of ordinary skill in the art at the time the invention was made would

have found it obvious to implement or incorporate Bilic's selecting whether to process

packet or send to storage, thereby avoiding the computer in Muller's system to reduce the burden of frame reassembly imposed on the host processor.

As per claim 23, Muller discloses the interface of claim 21, further comprising a Fibre Channel controller connectable to the storage unit (column 61, lines 55-60).

As per claim 24, Muller discloses the interface device of claim 21, further comprising a file cache adapted to store said data (column 56, lines 20-30, column 58, lines 26-30, column 61, lines 34-35, column 62, lines 47-52).

As per claim 26, Muller discloses the network interface of claim 21, further comprising a file cache adapted to store said data (column 56, lines 20-30, column 58, lines 26-30, column 61, lines 34-35, column 62, lines 47-52).

As per claim 27, Muller discloses the network device of claim 21, further comprising a file cache adapted to store said data under control of a file system in the computer (column 56, lines 20-30, column 58, lines 26-30, column 61, lines 34-35, column 62, lines 47-52).

As per claim 28, Muller discloses a method for operating an interface device for a computer, the interface device connectable to a network and a storage unit, the storage unit including a disk drive, the method comprising:

- Receiving, by the interface device from the network, a packet containing data and a
  Transmission Control Protocol (TCP) header (column 4, lines 48-50, column 7, lines
  20-25, 31-35, 64-67, column 8, lines 1-5, 17-20, 50-60, column 9, lines 1-5, column
  15, lines 35-38, column 35, lines 53-67, column 36, lines 11-30);

- Processing, by the interface device, the TCP header (column 4, lines 45-50, 58-67,
  column 8, lines 50-60, 66-67, column 9, lines 13-17, 22-35, 66-67);

- Storing, on the interface device, information regarding a TCP connection (column 4,
  lines 20-25, column 9, lines 14-16, 20-25, 56-58, column 10, lines 1-7, column 11,
  lines 46-59, column 12, lines 11-15);

- Associating, by the interface device, the packet with the TCP connection (column 35,
  lines 53-67, column 36, lines 11-30).

Muller does not explicitly disclose:

- Selecting, by the interface device, whether to process the packet by the computer or
  to send the data from the packet to the storage unit, thereby avoiding the computer.

However, in an analogous art, Bilic discloses a protocol processor arranged to select
the group of packets for reassembly depending on which of the communication
protocols was used in transmitting the packets. It controls the host interface logic so to
write the data packets that do not belong to the identified group to the host memory
without reassembly processing by the network interface device (paragraphs [0013,
0023, 0026, 0043, 0046]).

Therefore, one of ordinary skill in the art at the time the invention was made would
have found it obvious to implement or incorporate Bilic's selecting whether to process

packet or send to storage, thereby avoiding the computer in Muller's system to reduce

the burden of frame reassembly imposed on the host processor.

As per claim 29, Muller discloses the method of claim 28, further comprising

creating, by the computer, the information regarding the TCP connection (column 5,

lines 35-45).

As per claim 30, Muller discloses the method of claim 28, wherein the interface

device includes a network port, and the packet is received via the port and the data is

sent to the storage unit via the port (column 10, lines 1-7).

As per claim 31, Muller discloses the method of claim 28, wherein the interface

device includes first and second network ports, and the packet is received via the first

port and the data is sent to the storage unit via the second port (column 10, lines 35-

47).

As per claim 32, Muller discloses the method of claim 28, further comprising storing

the data on a file cache of the interface device (column 56, lines 20-30, column 58, lines

26-30, column 61, lines 34-35, column 62, lines 47-52).

As per claim 33, discloses the method of claim 28, further comprising adding a network protocol header to the data for sending the data to the storage unit (column 9, lines 50-67).

3.   Claims 2, 5, 22, 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Muller et al. (hereinafter "Muller", 6,650,640 B1) in view of Bilic et al. (hereinafter "Bilic", US Patent Publication 20010048681 A1) and in further view of Day et al. (hereinafter "Day", US Patent 6065096).

As per claims 2 and 22, Muller, in view of Bilic, discloses the interface device of claims 1 and 21.

Muller, in view of Bilic, does not explicitly disclose the interface further comprising a SCSI controller connectable to the storage unit.

However, Day discloses SCSI interface channels attached to disk drives (column 2, lines 40-54, column 5, lines 1-25).

Therefore, one of ordinary skill in the art at the time the invention was made would have found it obvious to implement or incorporate in Muller's device Day's interface comprising a SCSI controller in order to provide for a simple, lower cost RAID controller architecture to enable lower cost and complexity associated with high performance and high reliability storage subsystems.

As per claims 5 and 25, Muller, in view of Bilic, discloses the network interface device of claims 1 and 21.

Muller, in view of Bilic, does not explicitly disclose the interface further comprising a

RAID controller connectable to the storage unit.

However, Day discloses a RAID controller that integrates onto a single integrated circuit

of a general-purpose processor (column 2, lines 11-25, 55-67).

Therefore, one of ordinary skill in the art at the time the invention was made

would have found it obvious to implement or incorporate in Muller's device Day's

interface comprising a RAID controller allowing the disk interface connections and

protocols to be more flexibly selected but at the cost of less integration within the circuit.

Response to Arguments

4.   Applicant's arguments filed have been fully considered but they are not

persuasive.

The Office notes the following argument(s):

(a)   Regarding claim 1, Bilic does not teach or suggest that data from a packet are

sent to a storage unit, the storage unit including a disk drive.

(b)   Regarding claim 1, Bilic does not even suggest that packets transferred using

different protocols go to different memories, but rather states that all the packets go to

the host memory.

(c)   Regarding claim 3, Muller nor Bilic teach or suggest the claimed limitations.

(d)   Regarding claim 4, Muller does not teach cited limitations.

(e)   Regarding claim 6, Muller does not teach cited limitations.

(f)   Regarding claim 7, Muller does not teach cited limitations.

(g)   Regarding claim 21, Bilic does not teach or suggest that data from a packet are sent to a storage unit, the storage unit including a disk drive.

(h)   Regarding claim 21, Bilic does not even suggest that packets transferred using different protocols go to different memories, but rather states that all the packets go to the host memory.

(i)   Regarding claim 23, Muller does not teach cited limitations.

(j)   Regarding claim 24, Muller does not teach cited limitations.

(k)   Regarding claim 26, Muller does not teach cited limitations.

(l)   Regarding claim 28, Bilic does not teach or suggest that data from a packet are sent to a storage unit, the storage unit including a disk drive.

(m)   Regarding claim 28, Bilic does not even suggest that packets transferred using different protocols go to different memories, but rather states that all the packets go to the host memory.

In response to:

(a), (g), (k)   In response to applicant's arguments, the recitation "storage unit including a disk drive" has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535

F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88

USPQ 478, 481 (CCPA 1951).

(b), (h), (m)   In response to applicant's argument that the references fail to show certain

features of applicant's invention, it is noted that the features upon which applicant relies

(i.e., "packets transferred using different protocols go to different memories") are not

recited in the rejected claim(s). Although the claims are interpreted in light of the

specification, limitations from the specification are not read into the claims. See *In re*

Van Geuns, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Bilic teaches an embedded processor detecting protocol and header information of

received packets. Based on this information, it is determined whether the host

processor is to process the packet or store the packet without processing by the host

processor (paragraphs [0013, 0026, 0043, 0046-0048]).

(c)-(f), (i)-(k) Applicant's arguments fail to comply with 37 CFR 1.111(b) because they

amount to a general allegation that the claims define a patentable invention without

specifically pointing out how the language of the claims patentably distinguishes them

from the references.

Conclusion

5.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Barbara N. Burgess whose telephone number is (571)

272-3996. The examiner can normally be reached on M-F (8:00am-4:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Ario Ettinene can be reached on (571) 272-4001. The fax phone number for

the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

Barbara N Burgess
Examiner
Art Unit 2157

September 17, 2007

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